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In re Application of: Stanley et al.

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CERTIFICATE OF EXPRESS MAILING

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Susan Alpert Siegel, Ph.D.
Agent for Applicant

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PRELIMINARY AMENDMENT

Prior to examination, please amend the above-referenced application as follows:

In the Specification:

On page 1, after the title, please insert the following new paragraph:

--Priority Claim

This is a continuation of U.S. Patent Application No. 09/647,486, filed November 9, 2000, which is a § 371 U.S. national stage of PCT/GB00/00978 filed March 29, 1999, which was published in English under PCT Article 21(2), which in turn claims the benefit of Great Britain Application No. 9806666.5, filed March 27, 1998.--

In the claims:

Please cancel original claims 1-13, without prejudice to renewal.

Please add the following new claims:

--14. (New) A virus-like particle comprising a protein subunit structure of a papovavirus particle, wherein the particle comprises a protein subunit in the form of a fusion protein comprising (1) a polypeptide sequence derived from a major coat protein of a papovavirus, and (2) an additional peptide sequence, other than a sequence from said major coat protein, fused to the N-terminal of polypeptide sequence (1).

15. (New) A virus-like particle according to claim 14, wherein said fusion protein comprises a sequence derived from a major coat protein L1 of a papillomavirus.

16. (New) A virus-like particle according to claim 15, wherein said papillomavirus is a human papillomavirus (HPV) type 16 or 18.

17. (New) A virus-like particle according to claim 15, wherein said fusion protein comprises a protein with a sequence selected from the group consisting of (i) a full sequence of a human papillomavirus L1 protein, (ii) a sequence from a human papillomavirus L1 protein having an N-terminal deletion of up to 10 amino-acids, and (iii) a sequence from a human papillomavirus L1 protein with an aminoacid substitution mutation.

18. (New) A virus-like particle according to claim 14, wherein said fusion protein comprises an immunogenic sequence derived from a protein of a pathogen.

19. (New) A virus-like particle according to claim 14, wherein said fusion protein sequence comprises a polypeptide binding domain that enables affinity purification.

20. (New) A virus-like particle according to claim 14, that comprises (a) a conformational epitope corresponding to a native conformational epitope of the structure of a corresponding virus-like particle based on a major coat protein of unmodified sequence, and (b) an immunogenic epitope present on an N-terminal extension of said major coat protein sequence.

21. (New) A virus-like particle according to claim 14, wherein said fusion protein comprises a sequence from a papillomavirus L1 protein fused, at its N-terminus, to a sub-sequence from another papillomavirus protein selected from the group consisting of human papillomavirus (HPV) E1, E2, E6, and E7.

22. (New) A virus-like particle according to claim 14, wherein said fusion protein comprises a peptide sequence comprising at least about 15 amino acid residues that provides at least one epitope of a protein other than said major coat protein.

23. (New) A virus-like particle according to claim 14, wherein said fusion protein comprises an additional peptide sequence fused at the N-terminus of the major coat protein, wherein the additional peptide sequence comprises a polypeptide binding domain that enables affinity purification.

24. (New) A fusion protein comprising (1) a polypeptide sequence derived from a major coat protein of a papovavirus, and (2) an additional peptide sequence, that is not a polypeptide sequence from the major coat protein, fused to the N-terminus of sequence (1).

25. (New) A fusion protein according to claim 24, wherein the polypeptide sequence derived from a major coat protein is a polypeptide sequence derived from a major coat protein L1 of a papillomavirus.

26. (New) A fusion protein according to claim 25, wherein said papillomavirus is human papillomavirus (HPV) type 16 or 18.

27. (New) A fusion protein according to claim 24, comprising a sequence selected from the group consisting of (i) a full sequence of a human papillomavirus L1 protein, (ii) a sequence from a human papillomavirus L1 protein having an N-terminal deletion of up to 10 amino-acids, and (iii) a sequence from a human papillomavirus L1 protein with an amino acid substitution mutation.

28. (New) A fusion protein according to claim 24, comprising an immunogenic sequence derived from a protein of a pathogen.

29. (New) A fusion protein according to claim 24, further comprising a binding domain to enable affinity purification.

30. (New) A fusion protein according to claim 24, comprising a sequence from a papillomavirus L1 protein fused, at its N-terminus, to a sub-sequence from a further papillomavirus protein selected from the group consisting of human papillomavirus (HPV) E1, E2, E6 and E7.

31. (New) A fusion protein according to claim 24, comprising a peptide sequence comprising at least about 15 amino acid residues, wherein said peptide sequence provides at least one epitope of a protein other than said major coat protein.

32. (New) A fusion protein according to claim 24, further comprising a further peptide sequence fused at the N-terminus of the major coat protein, wherein said further peptide sequence comprises a his-tag or an epitope recognized by an antibody.

33. (New) A method of producing a fusion protein according to claim 14, comprising:

expressing a polynucleotide encoding said fusion protein in a host cell expression system to produce said fusion protein; and

harvesting said fusion protein.

34. (New) The virus-like particle according to claim 17, wherein said L1 protein has a C-terminal deletion.

35. (New) The virus-like particle according to claim 18, wherein said pathogen is a virus.

36. (New) The fusion protein of claim 27, wherein said L1 protein has a C-terminal deletion.

37. (New) The fusion protein of claim 28, wherein said pathogen is a virus.

38. (New) A method of producing a virus-like particle according to claim 24, comprising:

expressing a polynucleotide encoding said virus-like particle in a host cell expression system to produce said virus-like particle, and

harvesting said expressed virus-like particle.--

REMARKS

This Preliminary Amendment is submitted to recite the priority claim from corresponding International Application No. PCT/US99/00978 filed March 23, 1999, which in turn claims the benefit of Great Britain Application No. 9806666.5, filed March 27, 1998. The priority claim was already of record in the PCT application, where it was prominently noted in the PCT Request, and on the face of the published PCT application.

Claims 1-13 are cancelled herein, without prejudice. New claims 14-38 are added. These claims are directed to the same subject matter as the claims of PCT/GB99/00978 that were examined during international prosecution. The claims have been amended to conform with the requirements of U.S. claiming practice.

Support for new claims 14 and 24 can be found in the specification on page 2, lines 16-17. Support for new claims 15 and 25 can be found in the specification on page 2, lines 25-34. Support for new claims 16 and 26 can be found in the specification on page 2, lines 26-27. Support for new claims 17 and 27 can be found in the specification on page 4, lines 20-28.

Support for new claims 18, 28, 35 and 37 can be found in the specification on page 2, line 20 to page 3, line 10. Support for new claims 19, 23, 29, and 32 can be found in the specification on page 5, lines 14-15. Support for new claim 20 can be found in the specification on page 5, lines 17-23. Support for new claims 21 and 30 can be found in the specification on page 3, lines 2-10. Support for new claims 22 and 31 can be found in the specification on page 3, line 30 to page 5, line 22. Support for new claims 33 and 38 can be found in the specification on page 1, lines 31- to page 2, line 8, and on page 8, line 20 to page 9, line 10. Support for new claims 34 and 36 can be found in the specification on page 5, lines 34-35 and Figure 1B.

No new matter has been added.

CONCLUSION

Examination of the present application is respectfully requested. If any minor issues remain to be addressed, the Examiner is respectfully requested to call the undersigned patent attorney at the Portland telephone number listed below.

Respectfully submitted,

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Marked-Up Version of the Specification and Claims

In the Specification:

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